

THE ROLE OF FACULTY WOMEN IN ENGINEERING PROGRAMS FOR WOMEN

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Introduction

The recruitment and retention of engineering students have become matters of interest and concern in most engineering schools. Most engineering schools want to increase enrollment; however it is currently on the decline, in part due to decreased birth rates. Women are the largest untapped resource for increasing the engineering population. Local and national industries are seeking bright, capable, young engineers, especially women. In addition most schools and industries realize that engineering is the poorer for not having a diverse population, including the viewpoint and orientation of women.

A Women in Engineering (WIE) Program is a natural vehicle to use to increase the recruitment and retention of women engineering students. Some schools, such as Purdue,¹ have had a viable WIE Program for many years, but other schools are just now beginning such a program. When the topic of a WIE Program is discussed among engineering faculty, the consensus, or at least the first thought, is usually that this is a project for the women engineering faculty. However, women in engineering is not just a women faculty's problem. The under representation of women in engineering is a school problem and an industry problem.

Although women engineering faculty, on the surface, may seem to be the most logical source of leadership and mentorship for a women in engineering program, there are complications. There are very few women engineering faculty in the nation. For the most part, they are spread very thinly among many institutions. Most engineering schools have an unwritten 'quota' for their numerous committees. A token woman or minority member looks good on a committee. However, this 'inclusion' in administrative affairs can snowball for the woman or minority faculty member as they soon find themselves on many committees, with little time for the research and teaching on which they will be so heavily judged a few years later. Untenured women and men faculty have to be very careful to ensure that a generous portion of their effort is spent on research and teaching, not service.

If women engineering faculty inquire about the possibility of establishing a WIE Program in their school, they may be told, "The dean is really committed, but

in these tight times, just has no money for WIE." The suggested action is, if there are to be any WIE Program activities, the women engineering faculty will just have to do the work in their "spare" time. However, if a dean is *really* committed, then he or she will find creative ways to begin a WIE Program. Release-time for faculty or staff support, graduate assistantships and space can all be given to help start a program. If hard money is not available within the college, an Associate Dean or college fund-raiser could be directed to apply for grant monies or to contact industries for financial support of a WIE Program.

If at all possible, a WIE Program should not be added to the duties of an in-place Minority Engineering Program Director. In addition, a WIE Director should not report to a Minority Program Director. Since a WIE program is for women of all ethnicities, the two programs have many overlapping objectives and should cooperate and support each other. However, they are distinctly separate programs. The support needed for minority males is not the same as that for caucasian females or for women of color. It would be very difficult for a Director of both to give each program the effort that is required to be viable. Ideally, both Directors should report to the Dean or an Associate Dean who is supportive of each program.

Basic Requirements for a WIE Program

The basic requirements for a WIE Program should include solid administrative commitment, adequate funding, a permanent position for the director, careful director selection, and faculty participation. Any WIE Program will flourish where there is true administrative commitment. This commitment means more than lip service. If at all possible, the WIE Director should be funded by hard line money. The program should be recognized as a necessary and legitimate part of the engineering school. If only soft money is available, every effort should be made to develop hard money support for the program. Faculty or staff members directing such a program should, at a minimum, have specific release time to carry out the administration of the program.

Although ideally the WIE Director should be a full-time position, a program can get started on less. If only a part-time staff or graduate assistantship is available, such a position is at least a start. With the help of faculty, other staff, and students, a very viable program can be launched from such a pad. Certainly every effort should be made to develop the Directorship position into a full-time, salaried, staff position. The WIE Director should have a written agreement documenting the job expectations and should be provided adequate support in terms of staffing, budget, space, and cooperation. The WIE Director could be a faculty member, a staff member, or a student. The pros and cons of the Director being a faculty or staff member will be discussed in the next section.

A more detailed description of a systematic and comprehensive approach to designing and implementing university level retention programs for women in Engineering is given by Brainard.² Faculty participating in a WIE Program can be very helpful to the program. The advantages or disadvantages of faculty

participation will be discussed later, as well as how to increase faculty involvement in WIE Programs.

The WIE Director: Faculty or Staff?

From the viewpoint of a woman student, a woman faculty member directing a WIE Program can provide a good role model and mentor. A woman faculty Director in general should be knowledgeable about the engineering program and thus should be a good academic advisor. The faculty woman should be knowledgeable about course prerequisites and content, instructors and scheduling. The faculty Director should have some clout as a liaison to the faculty and as an advocate or watchdog on academic affairs that could adversely affect women.

On the other hand, if a faculty woman is directing a WIE Program part-time or in her "spare time," she will have limited time to devote to the publications and grant proposals that are expected of her. In addition she may not have good counselling skills or it may be difficult for her to relate to high school students.

A non-engineer staff Director may be much more excited and committed to directing a program than a faculty member, who is more academically oriented. Many faculty might find the details of running a program tedious and time-consuming. Students might find themselves more willing to discuss problems with a staff member who will not someday be a teacher of one of their classes.

There are both positive and negative considerations for any faculty woman contemplating the directorship of a WIE Program. The position may be very rewarding, challenging, and include a variety of activities. The Director may have control of her own budget and be knowledgeable on bringing in support money from industry. The ability of a Director to bring in outside money to run the program will usually be recognized and applauded for such efforts. The job can be very satisfying in listening, advising, and encouraging young women in the engineering major. Being able to directly make a difference in someone's life can be very satisfying work. Networking and travel can be a part of the job, as well as publishing in the area of women's programs. Thus, national recognition in this area is possible, which is usually of interest to an engineering school. Last, but not least, there may be the satisfaction of knowing that unless the women faculty had been willing to help, no program would have been started.

Unfortunately the directing of such a program is mostly of the "out of your own hide" variety for a woman engineering faculty member. The raising of money and the marketing of a program require substantial effort. There may be very little credit or recognition given for WIE program work, and a woman faculty member doing WIE programs may be discounted by peers as being "unacademic" or at the least, not on a par with "academic" peers. Such program work does take away from "pubs and bucks" that are valued so highly.

Faculty Considerations

It is very difficult to move from a non-tenure track position to one of tenure. A Faculty Associate or staff woman should not try to use the WIE Program Director spot as a step to a tenured position. Any faculty woman contemplating accepting the directorship of a WIE Program should evaluate carefully how this work will affect her general goals of tenure, promotion, merit pay, and job satisfaction. Any program director position assumed by faculty should be accompanied by a clear understanding and agreement in writing on the role of the faculty member.³

Tenure, promotion, merit pay and job satisfaction are the primary goals of an untenured Assistant Professor. Before accepting the directorship of a WIE Program, an Assistant Professor without tenure should ask herself the following questions: Will I be able to get tenure while doing this? Will I still be considered seriously as an academician if I am associated with "women's programs?" Do I have the support of my chair and dean? Do I have the job description and responsibilities in writing?³ Can I get (in writing) the probation time before tenure lengthened proportionally to the percentage of time that is spent in administration? Do I have adequate staff and financial support?

A tenured Associate Professor usually has the career goals of promotion, merit pay and job satisfaction. When considering the directorship of a WIE Program, the following questions might be asked: If merit pay is important, will credit toward merit pay be given for time spent on WIE Programs? Am I making a decision between administration and the rank of full professor? Can I still make full professor doing this administrative work? Can I retire happy and satisfied as an Associate Professor? Is this what I want to do? If I don't do this, will someone else do the job? Do I have my chair and dean's support? Will I have adequate staff and financial support?

On the other hand, a tenured, Full Professor, usually has only merit pay and job satisfaction to consider as career goals. The Full Professor contemplating administration a WIE Program might ask: Is this what I want to do? Will I get merit pay for this? Do I want to give up some of the research in my discipline? The Full Professor obviously has more options and is at less risk careerwise than the other professorial ranks.

Faculty Roles in WIE Programs

Ideally the Director of the WIE Program should report directly to someone in a position that can directly assist in providing resources and support. This person could be a President, Provost, or Vice-Provost. At the college level, short of being the Dean of an Engineering School, a very effective position that can be held by a woman faculty member as a leader and supporter of a WIE program, is that of the Associate Dean to whom the WIE Director reports. The assumption is made here that the Dean is supportive of WIE activities and thus allows the Associate Dean to be a real supporter and enabler of the program. Again, if a woman faculty member becomes the Director of a WIE Program, she should have a clear understanding of the effect of this appointment on her tenure,

promotion and merit, and this "clear understanding" needs to be put in writing. Women engineering faculty can also support a WIE program by serving on an advisory board or by giving other support.

Faculty on an advisory board appreciate well-defined roles and commitments. Their advice should be sought and considered. An advisory board can function as a sounding board and think tank for program ideas, and as a support group.

When asking faculty women for support, "no" should always be allowed as an answer. If a faculty member is allowed a gracious out, the "no" might be "yes" at a later time. Obviously the faculty should not be asked to do the job of the director. Faculty appreciate requests for support that have been broken down into small, specific, short term tasks. Possible short term tasks include: serving on a search committee for a WIE Director, serving on a scholarship committee, speaking at a class or function, helping with high school students on a Saturday, or speaking to high school students in their classroom.

Conclusion

The support and commitment of engineering faculty women are essential to the success of a WIE Program.² At the same time engineering faculty women can find that assisting a WIE Program can be very rewarding work. However, the faculty woman who makes a major commitment to a WIE Program should have the support of her chair and dean and have in writing a clear description of the role and how this role in her career will be evaluated.

References

1. Daniels, Jane "The Nuts and Bolts of Program Planning: Recruitment Programs," Women in Engineering Conference: A National Initiative Conference Proceedings, Washington, D.C., June 1, 1990, pp. 175-180.
2. Brainard, Suzanne G. "Nuts & Bolts of Retention Programs," Women in Engineering Conference: A National Initiative Conference Proceedings, Washington, D.C., June 1, 1990, pp. 215-220.
3. Kottick, Edward L., "Get It in Writing: Your Promotion or Tenure Could Depend on It," Spring 1992 Footnotes, A Publication of the AAUP, pp. 4-5.

